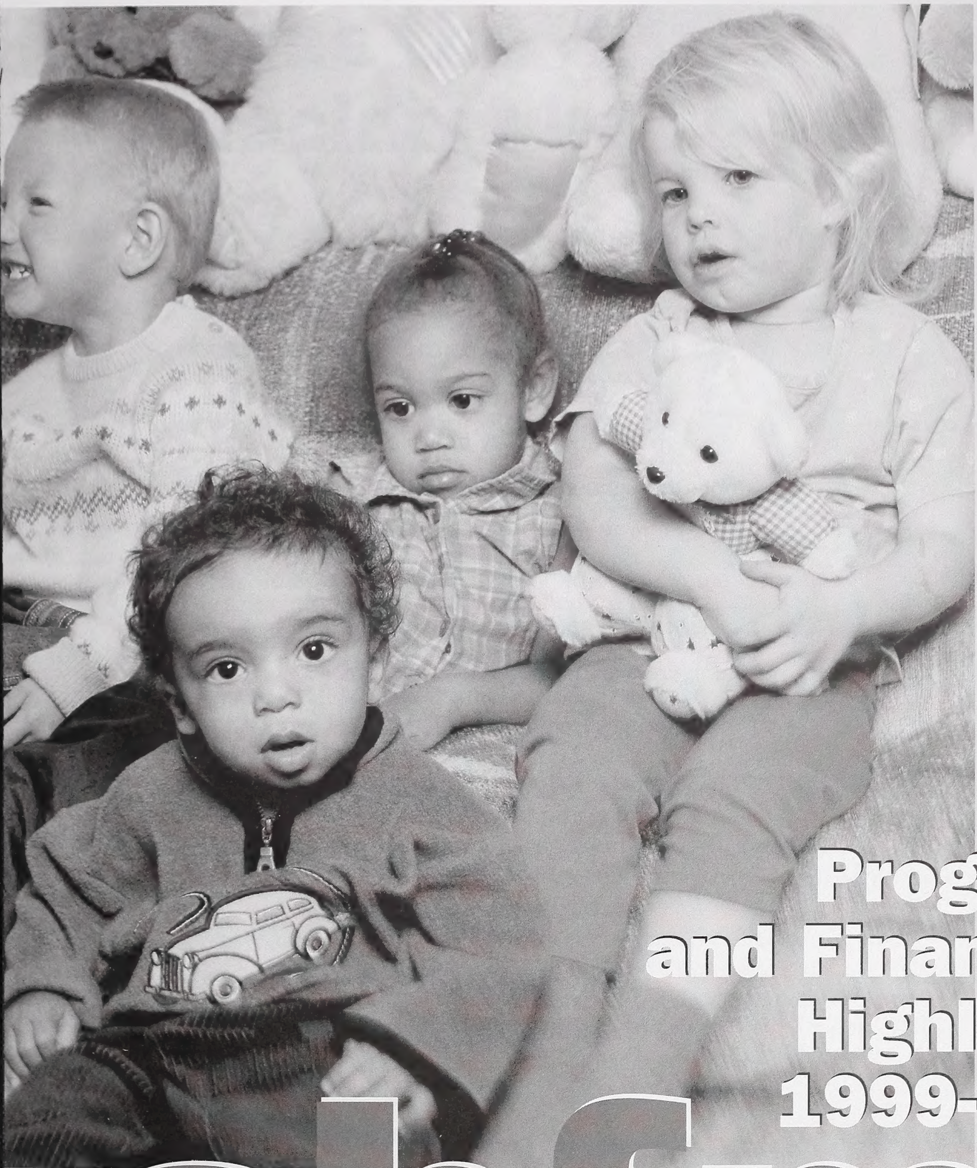


Programs and Financial* Highlights 1999-2000

ahfmr

ALBERTA HERITAGE FOUNDATION FOR MEDICAL RESEARCH

AHFMR mission

AHFMR supports a community of researchers who generate knowledge that improves the health and quality of life of Albertans and people throughout the world. AHFMR's long-term commitment is to fund basic, patient and health research based on international standards of excellence and carried out by new and established investigators and researchers in training.

Trustees
Rod Fraser
Paul V. Greenwood
Harley Hotchkiss (Chair)
Lou Hyndman
David Kitchen
Cled Lewis
Eldon Smith
Gail Surkan
Terrence White

President and CEO
Matthew W. Spence, MD, PhD

His discovery of a cancer-killing virus that has proven effective against 80% of cancers made international headlines. **Dr. Patrick Lee** showed that injecting live reovirus into cancer tumours results in the virus replicating and killing cancer cells.

How does the AHFMR decide who to fund?

All final decisions about people and projects supported by AHFMR are made by the Trustees, who weigh the mandate to support a balanced program of research that meets standards of excellence against available income, considering that a portion of it must be added to the endowment to conserve purchasing power for the future.

Who advises the Trustees?

The AHFMR Board of Trustees and executive rely on advice from people in the international, national, and provincial medical research and health communities. Members of the AHFMR Scientific Advisory Council advise on major applications and policy decisions related to research. Other scientists and stakeholders in research, education and health serve on AHFMR committees or as consultants. The Foundation has 13 standing review committees and a number of advisory committees for various programs.

How are the applications for funding evaluated?

AHFMR follows the established procedure of evaluating applications by a peer review system. This means applications are judged and rated by other researchers who have expert knowledge in the field of the applicant and related areas. Applications are assessed by external reviewers who may be working in any part of the world, and by internal AHFMR committees with representatives from Alberta and other North America universities. The committees then forward their recommendations to the Trustees.

How do successful candidates receive their funding?

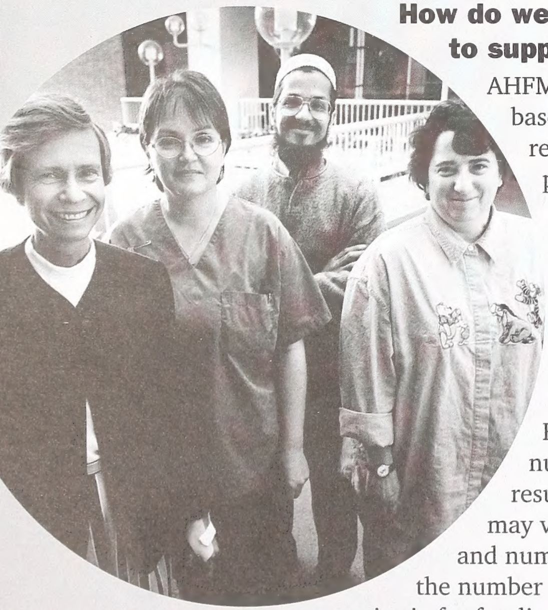
Researchers funded by the AHFMR are recruited in cooperation with personnel in the university, hospital or other organization where the researcher will conduct his or her research. Applications are submitted through the host organization and when the researcher is supported by AHFMR, he or she becomes an employee of the host organization, not AHFMR, although AHFMR pays salary and other support.

What is our endowment?

The Alberta Heritage Foundation for Medical Research Endowment Fund was established in 1980 to finance the objectives of the Foundation – to establish a long term program of medical and health research in the Province. The Fund operates under the authority of the Alberta Heritage Foundation for Medical Research Act. The initial investment was $300 million.

How is it managed?

The investment policy was developed over a number of years by Alberta Treasury in co-operation with AHFMR Board. The investment policy takes into account the expected conditions in the capital markets, the need for prudent investments, and a sustainable longer term spending program by the Foundation. The investment strategy under this policy is managed by the Investment Management Division of Alberta Treasury. The fund contains a diversified holding of Canadian investments along with equity investments in a number of international markets.



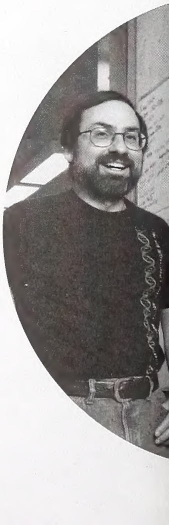
Dr. Kathrine Peters' research shows that many of the traditional features of neonatal intensive care units (NICUs), such as noise, harsh light, and activities like baths, place undue stress on fragile premature and sick babies. Her work is transforming the way NICUs look and function.

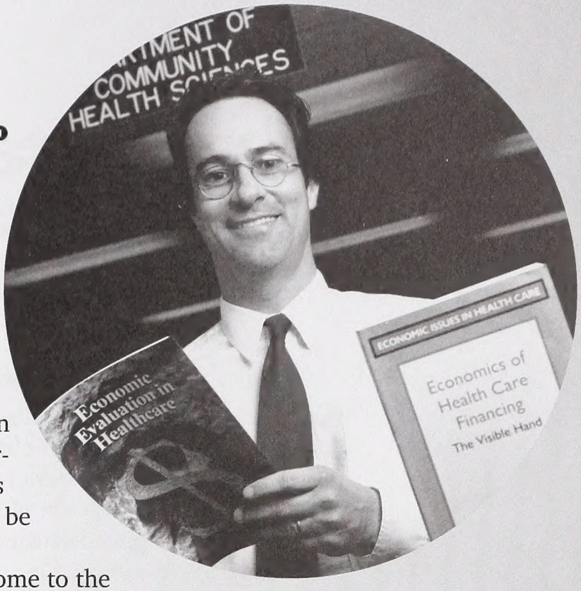
How do we decide how much we need to support our programs each year?

AHFMR management develops long range projections, based on Trustee decisions about maintaining current programs and developing new ones. These projections reflect the cost and number of investigators for each program, related costs and the anticipated value of the endowment. Annual budgets are then developed from this long range projection.

Why do actual expenditures sometimes vary from the budget?

Budgets are based on estimates of quality and number of applications for programs and the results of the review process. Actual expenditures may vary from the budget, depending on the quality and number of applications received and approved, and the number of awards accepted. (Excellence is the primary criteria for funding proposals.) In addition, the Foundation responds to needs as they arise in the community and unforeseen opportunities may result in increased spending.





DEPARTMENT OF COMMUNITY HEALTH SCIENCES
Economic Evaluation in Healthcare
ECONOMIC ISSUES IN HEALTH CARE
Economics of Health Care Financing
The Visible Hand

How do we determine how much to transfer from the endowment to cover our budget?

Foundation management works with Treasury in developing long term investment forecasts and strategies to ensure sufficient cash to fund current operations, while maintaining the value of the endowment by providing sufficient reinvestment of income to ensure future commitments can be met. To provide this balance between current needs and long term goals, the Trustees have adopted a guideline for how much can be transferred each year.

This guideline recognizes that annual income to the endowment could vary drastically, depending on the performance of financial markets in which investments are made. To protect the programs of research from suffering dramatic cutbacks should there be years of significant poor returns, the guideline has two components.

The suggested maximum transferable to the Foundation from the Fund in any year is 70% of the previous year's expenditures, plus 30% of 5% of the opening balance of the endowment. This is a variation of the commonly used 5% rule for endowments which states that, to fund current programs and maintain the potential to fund into the future, only 5% of the value of an endowment should be spent annually.

What is the investment strategy for the endowment?

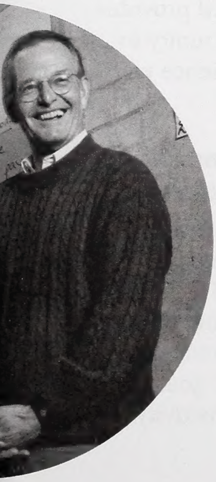
Due to these relatively high cash requirements to fund annual expenditures, the portfolio is structured to generate a high level of current income with a high degree of certainty. The current portfolio provides for the spending requirements plus growth to cover inflation, with a reasonable margin of safety. In order to generate this income, Treasury has developed a target asset mix for investments in short term, fixed income and equities. These investments are managed approximately 80% directly by Treasury and 20% by international and US managers.

How is Fund performance evaluated?

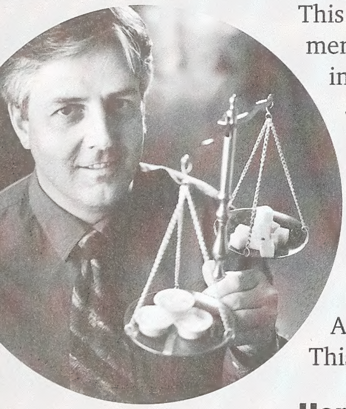
The Investment Management Division Strategy Committee of Alberta Treasury regularly reviews and benchmarks asset classes, and monitors the performance of fund managers, Treasury meets regularly with Foundation management, and reports fund performance to AHFMR Trustees.

Canada spends about 10% of its national resources on health and health care. Health economist **Dr. Cam Donaldson**, along with Drs. Chris Auld and Mingshan Lu, has built a strong research program in Calgary to examine further the role economics plays in the health field.

Drs. Jim McGhee and **Paul Mains** study a microscopic worm called *C. elegans*. Dr. McGhee investigates the similarities of gut development in the tiny worm and in higher organisms. Dr. Mains works with *C. elegans* in order to study embryo development.



Award programs of the Foundation



Research by **Dr. Gary Lopaschuk** on compounds that could reduce tissue damage during heart attacks has attracted attention from international drug companies. With the help of AHFMR's Technology Commercialization program and other partners, Dr. Lopaschuk set up a company called MMRL to further develop his research findings.

Heritage Medical Scientists

Heritage Medical Scientists are internationally recognized for their contributions to science. This award encourages the recruitment and establishment of senior medical scientists who provide leadership in Alberta's scientific community. This award is for five years and renewable.

Heritage Senior Medical Scholars

This award assures the continued recruitment and establishment of exceptional investigators in areas relevant to medical and health research. Candidates must hold an M.D., D.D.S., D.V.M., Ph.D. or the equivalent and have an established record of excellence in independent research over several years as a faculty member. The candidate must also show an interest in training Alberta's future research scientists. This five year award is nonrenewable.

Heritage Medical Scholars

Heritage Medical Scholars are investigators who have recently completed their postdoctoral research training and demonstrate the ability to initiate and conduct independent as well as collaborative research. Heritage Medical Scholars exhibit a desire and ability in training future research scientists. This nonrenewable five year award ensures the continuing growth of Alberta's scientific community.

Heritage Clinical Investigators

Clinical Investigatorships allow clinically qualified investigators, holding an M.D. or D.D.S. and full-time academic appointments in a sponsoring institution, to further develop their research experience under the mentorship of competitively funded basic or clinical researchers. Clinical investigators must have completed two to three years of supervised medical research training. This three-year award is renewable and may be extended for another three years. This award plays an important role in linking basic research to patient-based research and patient care.

Heritage Population Health Investigators

The Heritage Population Health Investigator encourages the recruitment and establishment of well trained investigators in Alberta. The development of skilled investigators in the fields of population health research, quantitative and population sciences, health services research, social and behavioural sciences and the humanities will establish a centre of excellence for these fields in Alberta. Applicants who have recently completed post M.D. or Ph.D. research training, but who have not yet established an independent research record are eligible for this three year renewable award. This award provides investigators with the opportunity to further their research experience with the aid of a mentor.

Independent Establishment Grants for New Investigators

Independent Establishment Grants are awarded to new investigators who are not funded by the Foundation. The grant aids new investigators by providing equipment, material and technical assistance that allows them to achieve their goals and increase their research productivity.

Sara Binder used the experience she has gained as a fourth year medical student to cover science, health, and medicine related stories working as an AHFMR Media Fellow at CBC Radio in Calgary. The AHFMR Media Fellowship program places two students with media outlets in Calgary and Edmonton for a paid summer work experience in communicating research to the public.

Fellowships

Heritage Medical Research Fellowships provide qualified candidates interested in pursuing a career in medical or health related research, with full-time and part-time postdoctoral training in research in the area of medical science relevant to the aims of the Foundation. Candidates must be sponsored by a faculty supervisor and must demonstrate high academic standing and research ability.

Heritage Clinical Fellowships

The Heritage Clinical Fellowship Program provides individuals who hold an M.D. or D.D.S. degree and have completed or are near completion of subspecialty clinical training with the opportunity to pursue a career in health related or clinical research in Alberta. Applicants must be sponsored by a faculty member who has a record of productive research and agrees to act as the Clinical Fellow's supervisor. Applicants are required to undertake two years of full-time research.

Heritage Health Research Career Renewal Awards

This program provides an opportunity for Alberta faculty members, demonstrating interest in clinical or health research, to acquire rigorous training in epidemiology, biostatistics, psychosocial sciences or clinical experimental methods and design. Upon entrance into the program, the investigators are part of a chain reaction that leads to the increased development of clinical and health research activities and the design of patient-based or population-oriented research in Alberta. This award is renewable.

Studentships

The Foundation provides full-time, part-time and summer Studentships in the area of medical and health research. Full-time and part-time Studentships are available for students who are either working towards professional health related degrees or who are interested in pursuing a career in medical or health related research. Summer Studentships provide the opportunity for students with exceptional academic records to participate directly in medical or health related research in Alberta. This program encourages students to consider formal training and a career in health research.

Heritage Youth Researcher Summer Program (HYRS)

HYRS stands for Heritage Youth Researcher Summer Program. Developed and funded by AHFMR, HYRS is modeled, in part, on the on-going WISEST Summer Research Program at the University of Alberta. HYRS offers a hands-on research experience at a university campus to about 30 exceptional high school students from all over Alberta, introducing them to the research world and the many exciting careers available in this field.

Dr. Lionel E. McLeod Health Research Scholarship

The scholarship was established in the memory of Dr. Lionel McLeod, who was head of Endocrinology at the University of Alberta, Dean of Medicine at the University of Alberta and the founding President of the Alberta Heritage Foundation for Medical research from 1981-1990. The award is given each year to an outstanding student at the Universities of Alberta, Calgary or British Columbia for full-time research that is relevant to human health.

Grants for Major Equipment

Major Scientific Equipment grants allow the university, on behalf of investigators, to purchase the necessary equipment that is essential to maintaining the high quality of research.

Institutional Support Programs

Institutional Support programs aid Alberta's research community in accessing the most up-to-date information and technical developments in medical and health related research. Programs such as the Visiting Lecturer and Travel Funds,

Twenty Blackfoot women in Southern Alberta are drawing upon their culture's tradition of storytelling to help them heal from addiction. **Dr. Virginia McGowan** is working with the group and with native women in Australia to compare their experiences and offer insights that could be used for programming and policies in native communities.

Heritage Visiting Professorships, Heritage Visiting Scientists, Infrastructure Grants, Conferences and Workshops and Local Workshops, Retreats or Planning Sessions provide important information and resources necessary to the continuing development and conduct of modern health research in Alberta.

Technology Commercialization (TC) Program

The Technology Commercialization program funds the commercialization of medically related innovations so that new technology can aid in improving healthcare. The program promotes research/industry collaboration. Technology Commercialization provides funding in three phases for commercially promising projects that do not fall under the mandate of traditional medical research funding agencies and are not developed adequately to attract outside investors. The program also receives funding by a provincial government Medical Innovation Program grant.

Health Research Fund

The Health Research Fund (HRF) was formed by the administrative integration of the Health Services Research and Innovation Fund (HSRIF) and the Mental Health Research Fund (MHRF), both initially established by Alberta Health. Since November 1995, these funds have been administered by the Foundation (AHFMR) through a five-year contract with the government called the Health Research Collaboration. The creation of the Health Research Fund is a direct result of a broad consultation which took place with many individual Albertans and Alberta organizations with an interest in health research. It is intended to provide funding for relevant, high quality health research across the entire spectrum of research areas including mental health research, health services research, population health research and health technology assessment research. This research is essential to sustain the goals of the Health Research Agenda developed by AHFMR through the broad consultation and deliberation of its Health Research Advisory Committee.

Community Health Research Visiting Lecturer Program

Community Health Research Visiting Lecturer awards provide an opportunity to assist Alberta organizations in attracting outstanding health researchers to the province. These visiting lecturers and/or consultants will broaden and enrich the research experience of investigators, administrators and/or trainees by enabling them, individually or in groups, to discuss their health research with the visiting lecturer awardee.

Community Health Research Travel Grant Program

Community Health Research Travel Grants are intended to enhance the quality of health research in Alberta by facilitating contacts between Alberta health researchers, as well as with their national and international colleagues.

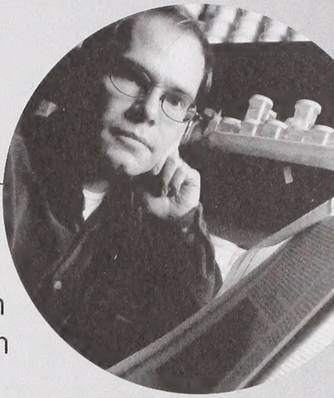
AHFMR Opportunity Fund

The purpose of the AHFMR Opportunity Fund (AOF) is to provide an additional opportunity to Alberta institutions (universities and regional health authorities) to develop internationally competitive health research in the province. The AOF is intended to address partnership opportunities for research funding that are not already available through AHFMR's current programs and which require a contribution to funding from other partners.

M.D./Ph.D. Trainees

The objective of the program is to provide exceptional candidates, interested in pursuing a career as Clinician Scientists, the opportunity to study for the M.D. and the Ph.D. degrees simultaneously. The Foundation support is complementary to the formal M.D./Ph.D. programs at the University of Alberta and the University of Calgary.

Major funding partners



Using his engineering background and aided by a computer model, **Dr. Neil Duncan** studies the discs in the lower back to better understand how they break down and cause problems in some people.

The Alberta Heritage Foundation for Medical Research has granted more than $600 million to support health research in Alberta. The Foundation and the Alberta research community relies heavily on the contributions of many partners to build and sustain health research in the province. It is estimated that for every Heritage dollar invested, AHFMR researchers attract $2-3 in outside funding.

A major funding partner in the Heritage health research enterprise in Alberta is the federal government through its major granting agencies: the Canadian Institutes of Health Research, the National Science and Engineering Research Council, the Social Sciences and Humanities Research Council, the National Health Research Development Program of Health Canada, the Canadian Health Services Research Foundation, the Canada Foundation for Innovation and Industry Canada.

The Government of Alberta through a number of ministries, health regions, departments, and programs is also a significant partner in AHFMR's endeavours to develop the health research capacity provincially.

The University of Alberta, the University of Calgary, and the University of Lethbridge are key partners with AHFMR in the realization of health research excellence in the classroom, laboratory and at the bedside.

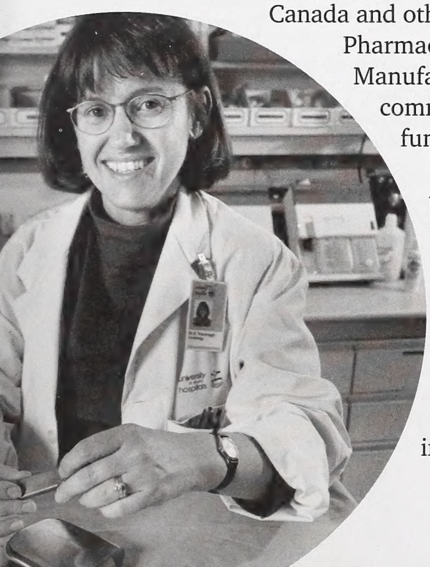
Voluntary funding agencies represent the hope of millions. Their contributions to the work of AHFMR funded researchers are helping to turn hope into realization. The Canadian Heart and Stroke Foundation, the Juvenile Diabetes Foundation, the National Cancer Institutes of Canada and others are valuable allies and agents for better health.

Pharmaceutical companies through the Pharmaceutical Manufacturers Association of Canada or individually are committed to investing in the excellence that AHFMR-funded research delivers.

International funding partners increasingly contribute to Heritage-funded research and include the Whitaker Foundation, the National Institutes of Health, the Wellcome Trust, and many other agencies.

To these partners and to all teachers, politicians, members of the media, and the public whose interest in, and support of, Heritage health research activities have helped us spread the story of AHFMR successes, we thank you and look forward to working with you in the years to come.

Irregularities of heart rhythm are not uncommon and most are harmless. It's when heart ventricles experience abnormally fast rhythms, that lives are threatened. **Dr. Katherine Kavanagh** is mapping electrical signals that heart cells use to communicate and keep the heart beating and contrasting them to how they communicate when signals are faulty.



AHFMR personnel awards

Currently implemented personnel as of March 31, 1999

Population Health Investigators

Auld, M. Christopher, Ph.D.
Faculty of Social Sciences, Department of Economics, University of Calgary
Health And The Labour Market

Brown, Lesley A., Ph.D.
Faculty of Arts & Sciences, Department of Kinesiology & Physical Education, University of Lethbridge
Identifying Risk Factors For Falling: Is Fear Of Falling Beneficial Or Detrimental To Stability?

Caulfield, Timothy A., LLM
Faculty of Law, Health Law Institute, University of Alberta
Legal Issues In The Allocation And Utilization Of Genetic Services: Regulation Of The Genetech Industry

Cook, Linda S., Ph.D.
Faculty of Medicine, Department of Community Health Sciences, University of Calgary
Combined Hormone Replacement Therapy And The Risk Of Breast Cancer

Ghali, William A., MD
Faculty of Medicine, Department of Medicine, University of Calgary
Evaluation Of Hospital Mortality And Complication Rates After Coronary Artery Bypass Surgery In Western Canada

Lu, Mingshan, Ph.D.
Faculty of Social Sciences. Department of Economics, University of Calgary
Incentives & Accountability In Publicly-Funded Health Care: The Case Of Mental Health And Substance Abuse Treatment

Johnson, Jeffrey A., Ph.D.
Faculty of Pharmacy, Institute Of Health Economics, University of Alberta
Valuation Of The Euroqol And SF-12 And Predictive Capabilities In A Longitudinal Health-Related Quality Of Life Assessment Of Albertans

McAlister, Finlay A., MD
Faculty of Medicine & Dentistry, Department of Medicine, University of Alberta
Studies To Enhance The Application Of Efficacious Therapies In Cardiovascular Disease

Smythe, James G., Ph.D.
Faculty of Arts, Department of Economics, University of Alberta
The Relationship Between Workers' Control Over Their Working Hours And Their Heath

Macarthur, Colin, MD, Ph.D.
Faculty of Medicine, Department of Pediatrics, University of Calgary
A Population Based Evaluation Of The Representativeness Of Emergency Department Data On Childhood Injury

Meadows, Lynn M., Ph.D.
Faculty of Medicine, Department of Family Medicine, University of Calgary
Developing An Understanding Of Albertan's Experiences Of Health

Patten, Scott B., MD, Ph.D.
Faculty of Medicine, Department of Community Health Sciences, University of Calgary
Depression: Epidemiology And Prevention

Clinical Investigators

Anderson, Todd J., MD
Faculty of Medicine, Department of Medicine, University of Calgary
Systemic Nature Of Endothelial Dysfunction

Beck, Paul L., MD, Ph.D.
Faculty of Medicine, Department of Medicine, University of Calgary
The Role Of TGF Beta In Intestinal Epithelial Function In Health And Disease

Chan, K. Ming, MD
Faculty of Medicine & Dentistry, Department of Physical Med & Rehabilitation (Division), University of Alberta
Interventions To Rescue The Decline Of Human Whole Muscle And Motor Unit Function In Aging, Post-Polio Syndrome And Amyotrophic Lateral Sclerosis

Coupland, Nicholas J., MD
Faculty of Medicine & Dentistry, Department of Psychiatry, University of Alberta
Flumazenil In Panic Disorder And Agoraphobia

Davies, H. Dele, MD
Faculty of Medicine, Department of Pediatrics, University of Calgary
Population Based Study Of Invasive Group B Streptococcal Infections And Cohort Study Of Maternal GBS Immunity In Alberta

Francis, Gordon A., MD
Faculty of Medicine & Dentistry, Department of Medicine, University of Alberta
Tyrosyl Radical-Mediated Oxidation Of High Density Lipoprotein

Le Méllédo, Jean-Michel, MD
Faculty of Medicine & Dentistry, Department of Psychiatry, University of Alberta
Influence Of Administration Of Female Gonadal Hormones On Panic Symptoms Induced By Pentagastrin In Female Panic Disorder Patients

Mew, Daphne J., MD, Ph.D.
Faculty of Medicine, Department of Surgery, University of Calgary
Gene Therapy In Mesothelioma

Michelakis, Evangelos D., MD
Faculty of Medicine & Dentistry, Department of Medicine, University of Alberta
Oxygen Sensing In Chronic Hypoxic Pulmonary Hypertension - Evidence For A Redox Based Oxygen Sensor

Increasingly, newspaper stories mark the ever-quickening advances made by researchers working in gene therapy. Legal scholar **Tim Caulfield** studies the ethical and legal complexities of the commercialization of genetic research.

The research **Dr. Keumhee C. Carrière** generates could lead to better and efficient decisions and evaluations of Alberta's healthcare system. A primary focus of Dr. Carrière's research as a statistician is to design new ways to analyze and interpret data used by decision-makers who direct healthcare spending and services.

Murray, Allan G., MD
Faculty of Medicine & Dentistry, Department of Medicine, University of Alberta
The Function Of CD95 (fasR or APO-1) Expressed On Vascular Endothelial Cells

Muruve, Daniel A., MD
Faculty of Medicine, Department of Medicine, University of Calgary
Biology Of Chemokine Expression In Adenoviral Gene Therapy

Power, Christopher N., MD
Faculty of Medicine, Department of Clinical Neurosciences, University of Calgary
Molecular Michanisms Of HIV-1 Envelope Mediated Neurodegeneration

Robertson, Marli A., MD
Faculty of Medicine, Department of Pediatrics, University of Calgary
Cellular Responses Of Intestinal Crypt Cells To Growth Factors And Secretory Stimuli

Salo, Paul T., MD
Faculty of Medicine, Department of Surgery, University of Calgary
Neurobiology Of Joint Aging And Degeneration

Silverstone, Peter H., MD
Faculty of Medicine & Dentistry, Department of Psychiatry, University of Alberta
Effects Of Lithium On The Phosphoinositol Cycle In Patients With Mood Disorders

Tibbles, Lee Anne, MD
Faculty of Medicine, Department of Medicine, University of Calgary
The Role Of Stress Responsive Kinases In Endothelial Adhesion

Wanke, Irene E., MD, Ph.D.
Faculty of Medicine, Department of Medicine, University of Calgary
Regulation Of Hepatic Gene Expression In Diabetes Mellitus

Winston, Brent W., MD
Faculty of Medicine, Department of Medicine, University of Calgary
The Regulation Of IGF-1 Gene Transcription And Its Potential Role In Fibrotic Lung Disease

Scholar

Aitchison, John D., Ph.D.
Faculty of Medicine & Dentistry, Department of Cell Biology, University of Alberta
Macromolecular Transport Through The Nuclear Pore

Andrew, Susan E., Ph.D.
Faculty of Medicine & Dentistry, Department of Medical Genetics, University of Alberta
Mouse Models of Genomic Instability

Bateson, Alan N., Ph.D.
Faculty of Medicine & Dentistry, Department of Pharmacology, University of Alberta
Regulation And Modulation Of GABA A Receptor Expression

Bennett, David J., Ph.D.
Faculty of Rehabilitation Medicine, University of Alberta
Recovery Of Motoneuron Function After CNS Injury

Berthiaume, Luc, Ph.D.
Faculty of Medicine & Dentistry, Department of Cell Biology, University of Alberta
Dynamic Protein Palmitoylation In Cellular Signaling And Targeting

Braun, Andrew P., Ph.D.
Faculty of Medicine, Department of Pharmacology & Therapeutics, University of Calgary
Molecular Analysis of Ca^{2+} - Activated K^{+} Channel Structure and Function

Bray, Robert C., MD
Faculty of Medicine, Department of Surgery, University of Calgary
Vascular And Mechanical Adaptations After Surgery

Brook, William J., Ph.D.
Faculty of Medicine, Department of Biochemistry and Molecular Biology, University of Calgary
Molecular Mechanisms Of Limb Development

Brown, Christopher B., MD
Faculty of Medicine, Department of Medicine, University of Calgary
Complexes And Complexities: Studies Of The Receptor For The Hematopoietic Cytokine GM-CSF

Buchanan, Lori L., Ph.D.
Faculty of Science, Department of Psychology, University of Alberta
Phonological Processing In Language Impaired Populations

Burshtyn, Deborah N., Ph.D.
Faculty of Medicine & Dentistry, Department of Medical Microbiology & Immunology, University of Alberta
Inhibitory Receptors Of The Immune System

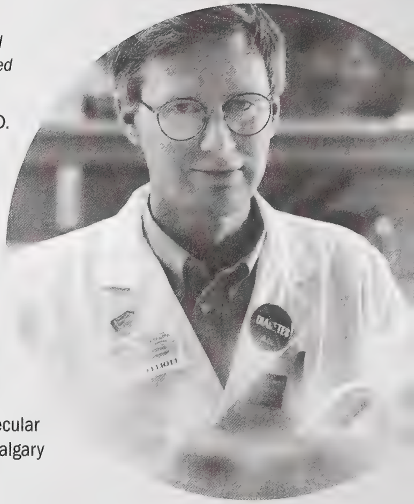
Cabeza, Roberto E., Ph.D.
Faculty of Science, Department of Psychology, University of Alberta
Neural Correlates Of Recollection In Young And Older Adults: Event-Related fMRI Studies

Casey, Joseph R., Ph.D.
Faculty of Medicine & Dentistry, Department of Physiology, University of Alberta
Mechanism And Interactions Of Anion Exchange Proteins

Chen, Sui R. (Wayne), Ph.D.
Faculty of Medicine, Department of Biochemistry and Molecular Biology, University of Calgary
Structure, Function And Regulation Of Ryanodine Receptors In Smooth Muscle

Deans, Julie P., Ph.D.
Faculty of Medicine, Department of Biochemistry and Molecular Biology, University of Calgary
Molecular Analysis Of The Multimeric CD20 Complex On B Lymphocytes

Another member of the U of A diabetes team, **Dr. John Elliott**, uses gene therapy to develop new types of early blood tests for Type I diabetes and for multiple sclerosis. The team is investigating alternative sources to scarce human islet tissue.



Ongoing research on a gene discovered by **Dr. Karl Riabowol's** lab is showing that it may be key to preventing the growth of some cancer cells. Recent work shows that the gene may respond to DNA damaging agents and that it may force cells with defective genetic material to die under normal conditions. Cancer cells that shut down this gene may survive with DNA damage, becoming increasingly resistant to treatment.

Davidge, Sandra T., Ph.D.
Faculty of Medicine & Dentistry, Department of Obstetrics & Gynaecology, University of Alberta
Sex Steroids And Vascular Function

Glerum, D. Moira, Ph.D.
Faculty of Medicine & Dentistry, Department of Medical Genetics, University of Alberta
Synthesis And Assembly Of Cytochrome Oxidase

Glover, J. N. Mark, Ph.D.
Faculty of Medicine & Dentistry, Department of Biochemistry, University of Alberta
The Structure Basis Of The Association And Nucleic Acid Binding Of Transcription Factor Complexes

Grundy, Paul E., MD
Molecular Oncology, Cross Cancer Institute
Identification And Assessment Of Pathological Significance Of Additional Wilms Tumor Loci

Hasan, Shabih U., MD, Ph.D.
Faculty of Medicine, Department of Pediatrics, University of Calgary
Control Of Breathing During Perinatal Period

Heslip, Timothy R., Ph.D.
Faculty of Medicine, Department of Biochemistry and Molecular Biology, University of Calgary
In Vivo Role Of Proteoglycans And Glycosaminoglycans In Growth Factor Signalling

Ho, Anthony K., Ph.D.
Faculty of Medicine & Dentistry, Department of Physiology, University of Alberta
Interaction Of Signalling Pathways In The Regulation Of Cell Functions: Post-Receptor Mechanisms

Hobman, Tom C., Ph.D.
Faculty of Medicine & Dentistry, Department of Cell Biology, University of Alberta
Protein Trafficking Between The Endoplasmic Reticulum And Golgi

Kavanagh, Katherine M., MD
Faculty of Medicine & Dentistry, Department of Medicine, University of Alberta
The Importance Of Alterations In The Passive Properties Of Myocardial Conduction

Kieffer, Timothy J., Ph.D.
Faculty of Medicine & Dentistry, Department of Medicine, University of Alberta
Leptin Regulation Of Beta-Cell Function And Glucose Homeostasis

Kleim, Jeffrey A., Ph.D.
Faculty of Arts & Sciences, Department of Psychology & Neuroscience, University of Lethbridge
Neural Mechanisms Underlying Recovery From Stroke

Korbutt, Gregory S., Ph.D.
Faculty of Medicine & Dentistry, Department of Surgery, University of Alberta
Neonatal Porcine Islet Grafts For Human Transplantation: Promoting In Vitro Growth And Co-Transplantation With Sertoli Cells

Kumar, Rakesh, Ph.D.
Faculty of Medicine & Dentistry, Department of Medical Microbiology & Immunology, University of Alberta
Design And Evaluation Of Novel Antiviral Agents For Human Immunodeficiency Virus And Herpes Virus Infections

Kunimoto, Dennis Y., MD
Faculty of Medicine & Dentistry, Department of Medical Microbiology & Immunology, University of Alberta
Evaluation Of Human Immunity To TB Using The Hu-PBL-SCID Model

Lee, Ki-Young, Ph.D.
Faculty of Medicine, Department of Cell Biology & Anatomy, University of Calgary
Regulation Of Neuronal Cdc2-Like Kinase And Its Role In Brain Pathology

Lee, Samuel S., MD
Faculty of Medicine, Department of Medicine, University of Calgary
Membrane Studies In Experimental Cirrhotic Cardiomyopathy

Lehner, Richard, Ph.D.
Faculty of Medicine & Dentistry, Department of Pediatrics, University of Alberta
Triacylglycerol Synthesis

Logan, C. Cairine, Ph.D.
Faculty of Medicine, Department of Cell Biology & Anatomy, University of Calgary
Molecular Mechanisms Of Hindbrain Sensory Nervous System Development

Lytton, Jonathan, Ph.D.
Faculty of Medicine, Department of Biochemistry and Molecular Biology, University of Calgary
Molecular Regulation Of Na/Ca Exchanger Function

MacNaughton, Wallace K., Ph.D., Faculty of Medicine, Department of Physiology & Biophysics, University of Calgary
Mechanisms Of Acute Radiation-Induced Intestinal Dysfunction

Madsen, Karen L., Ph.D.
Faculty of Medicine & Dentistry, Department of Medicine, University of Alberta
The Role Of Bacteria In Modulating Intestinal Permeability And Inflammation In The IL-10 Gene Deficient Mouse

Maksymowych, Wolodymyr P., MD, Faculty of Medicine & Dentistry, Department of Medicine, University of Alberta
Antigen Processing Genes In Ankylosing Spondylitis

McFarlane, Sarah, Ph.D.
Faculty of Medicine, Department of Cell Biology & Anatomy, University of Calgary
Molecular Mechanisms Of Visual System Development

Mody, Christopher H., MD
Faculty of Medicine, Department of Microbiology & Infectious Diseases, University of Calgary
The Immune Response To Cryptococcus Neoformans In AIDS

Moore, Ronald B., MD, Ph.D.
Faculty of Medicine & Dentistry, Department of Surgery, University of Alberta
Photodynamic Therapy (PDT) Of Urological Malignancies

Nguyen, Peter V., Ph.D.
Faculty of Medicine & Dentistry, Department of Physiology, University of Alberta
Age-Dependent Determinants Of Memory Function And Synaptic Plasticity

Patel, Kamala D., Ph.D.
Faculty of Medicine, Department of Physiology & Biophysics, University of Calgary
Molecular Mechanims Of Eosinophil Rolling

Phipps, Barry M., Ph.D.
Faculty of Science, Department of Biological Sciences, University of Calgary
Structure-Based Mechanisms Of Cytosolic Chaperonins And Virulence-Associated Surface Proteins

Radomski, Marek W., MD, Ph.D. Faculty of Medicine & Dentistry, Department of Pharmacology, University of Alberta
Role Of Nitric Oxide In Platelet Function In Normal And Pathological Pregnancies

Raine, Kim D., Ph.D.
Faculty of Agriculture, Forestry & Home Economics, Department of Agriculture, Food & Nutritional Sciences, University of Alberta
An Ecological Perspective On Capacity Builidng For Population Health

Rancourt, Derrick E., Ph.D.
Faculty of Medicine, Department of Oncology, University of Calgary
Novel Serine Proteinases In Mammalian Implantation: Investigating Function And Therapeutics

Robbins, Stephen M., Ph.D.
Faculty of Medicine, Department of Oncology, University of Calgary
The Role of the SRC Family Protein-Tryosine Kinase, HCK in Hematopoietic Cells

Shibuya, Ellen K., Ph.D.
Faculty of Medicine & Dentistry, Department of Cell Biology, University of Alberta
Signal Transduction And Cell Cycle Reentry In Oocytes

Stuart, David T., Ph.D.
Faculty of Medicine & Dentistry, Department of Biochemistry, University of Alberta
Control Of DNA Replication And Genome Stability During Gametogenesis

Surette, Michael G., Ph.D.
Faculty of Medicine, Department of Microbiology & Infectious Diseases, University of Calgary
Biochemistry And Physiology Of Signal Transduction In Bacteria

Swain, Mark G., MD
Faculty of Medicine, Department of Medicine, University of Calgary
Fatigue In Experimental Cholestasis

Tari, Leslie W., Ph.D.
Faculty of Science, Department of Biological Sciences, University of Calgary
Crystallographic Studies Of Human Phosphoenolpyruvate Carboxykinase And DNA Triplexes

Tredget, Edward E., MD
Faculty of Medicine & Dentistry, Department of Surgery, University of Alberta
The Effect Of Interferon Alpha 2B On The Biology Of Human Hypertrophic Scars

Tse, Frederick W., Ph.D.
Faculty of Medicine & Dentistry, Department of Pharmacology, University of Alberta
Control Of Exocytosis By Intracellular Messengers

Tse, Amy M. W., Ph.D.
Faculty of Medicine & Dentistry, Department of Pharmacology, University of Alberta
Neuroendocrine Control Of Adrenocorticotropic Hormone (ACTH) Secretion

Walter, Michael A., Ph.D.
Faculty of Medicine & Dentistry, Department of Ophthalmology, University of Alberta
Identification Of The Molecular Basis Of Iridogoniodysgenesis

Wevrick, Rachel, Ph.D.
Faculty of Medicine & Dentistry, Department of Medical Genetics, University of Alberta
Organization And Regulation Of Imprinted Genes On Proximal Human Chromosome 15

Wilman, Alan H., Ph.D.
Faculty of Medicine & Dentistry, Department of Biomedical Engineering, University of Alberta
Detection Of Vascular Pathology With Transient 3D Magnetic Resonance Angiography

Woodman, Richard C., MD
Faculty of Medicine, Department of Medicine, University of Calgary
Human Neutrophil Leukosialin (CD43): Characterization And Functional Significance Of Shedding

AHFMR's hands-on research experience program got the thumbs up from 30 high school students from across the province in the summer of 2000. The **Heritage Youth Researcher Summer (HYRS) Program** participants worked in the labs of Heritage-funded scientists for six weeks at the University of Calgary and the University of Alberta.

The rigorous nature of cancer treatment can take a harsh physical toll on patients. **Dr. Kerry Courneya** is conducting an innovative research project to see if exercise can improve the way patients feel during and after cancer treatment.

Zamponi, Gerald W., Ph.D.
Faculty of Medicine,
Department of Pharmacology & Therapeutics,
University of Calgary
Molecular Determinants Of Calcium Channel Pharmacology

Zimmerly, Steven J., Ph.D.
Faculty of Science,
Department of Biological Sciences,
University of Calgary
Characterization Of A Reverse Transcriptase Encoded By A Group II Intron

Zochodne, Douglas W., MD
Faculty of Medicine,
Department of Clinical Neurosciences,
University of Calgary
Peptides And Opioids In Peripheral Nerve Injury

One of the most devastating effects of stroke can be the loss or impairment of language abilities. **Dr. Lori Buchanan** is finding new pathways in the brains of stroke patients to help develop new ways of speaking or reading.

Senior Scholarship

Agellon, Luis B., Ph.D.
Faculty of Medicine & Dentistry, Department of Biochemistry, University of Alberta
Regulation Of Plasma And Bile Lipid Homeostasis

Buchan, Alastair M., MD
Faculty of Medicine,
Department of Clinical Neurosciences, University of Calgary
Neuroprotective Efficacy Of BDNF And GDNF In Vivo: A Molecular Characterization

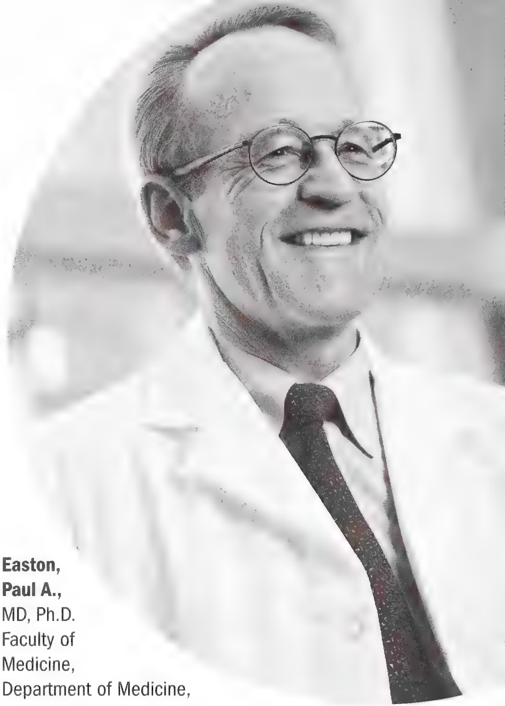
Burke, Brian, Ph.D.
Faculty of Medicine,
Department of Cell Biology & Anatomy, University of Calgary
Structure And Function Of Nuclear Pore Complex Proteins

Carrière, Keumhee C., Ph.D.
Faculty of Science,
Department of Mathematical Sciences, University of Alberta
Biostatistical Advancements In Medical And Health Research

Cole, William C., Ph.D.
Faculty of Medicine,
Department of Pharmacology & Therapeutics, University of Calgary
Structure/Function Relations Of Voltage-Gated K+ Channels In Vascular Smooth Muscle

Donaldson, Cameron, Ph.D.
Faculty of Medicine,
Department of Community Health Sciences,
University of Calgary
Creation Of Health Economics Programme Of Research At The University of Calgary

Duszyk, Marek, Ph.D.
Faculty of Medicine & Dentistry, Department of Physiology, University of Alberta
Regulation Of Human Airway Epithelial Ion Channels By Nitric Oxide



Easton, Paul A., MD, Ph.D.
Faculty of Medicine,
Department of Medicine,
University of Calgary
Respiratory Muscle Compensation, During REM Sleep and Wakefulness, With Diaphragm Paralysis Or Spinal Cord Injury

Elliott, John F., MD, Ph.D.
Faculty of Medicine & Dentistry, Department of Medical Microbiology & Immunology, University of Alberta
Improving Pancreatic Islet Graft Survival By Transfer Of Genes Encoding Immunomodulatory Proteins Into Donor Islets

Ellison, Michael J., Ph.D.
Faculty of Medicine & Dentistry, Department of Biochemistry, University of Alberta
The Role Of Ubiquitin Dependent Proteolysis In Cell Proliferation

Fliegel, Larry, Ph.D.
Faculty of Medicine & Dentistry, Department of Biochemistry, University of Alberta
Ion Exchangers Of Heart Sarcolemma

Gillis, Anne M., MD
Faculty of Medicine,
Department of Medicine,
University of Calgary
Spatial And Temporal Heterogeneity Of Repolarization In Hypertrophy And Congestive Heart Failure

Greer, John J., Ph.D.
Faculty of Medicine & Dentistry, Department of Physiology, University of Alberta
Diaphragm-Phrenic Nerve Development And The Pathogenesis Of Congenital Diaphragmatic Hernia (CDH)

Holmes, Charles F., Ph.D.
Faculty of Medicine & Dentistry, Department of Biochemistry, University of Alberta
Regulation Of Protein Phosphatases -1 And -2A By Natural Product Toxins And Reversible Phosphorylation

Kane, Kevin P., Ph.D.
Faculty of Medicine & Dentistry, Department of Medical Microbiology & Immunology, University of Alberta
TCR-Activated CD8 Binding In T Cell Adhesion And Response

Kargacin, Gary J., Ph.D.
Faculty of Medicine,
Department of Physiology & Biophysics, University of Calgary
Structure And Regulation Of Smooth Muscle

Sensory nerve fibres pick up feeling and sensation and carry the messages back to the brain. **Dr. Manuel Hulliger** investigates the role of sensory feedback from muscles, limbs, and other body parts that control movement. He hopes to gain a better understanding of what happens in the brain during recovery from motor deficits.

Kubes, Paul, Ph.D.
Faculty of Medicine, Department of Physiology & Biophysics, University of Calgary
Polymorphonuclear Leukocyte-Endothelial Cell Interactions: The Role Of Nitric Oxide

Lees-Miller, Susan P., Ph.D.
Faculty of Science, Department of Biological Sciences, University of Calgary
DNA Dependent Protein Kinase In DNA Repair, Viral Infection And Apoptosis

Loutzenhiser, Rodger D., Ph.D.
Faculty of Medicine, Department of Pharmacology & Therapeutics, University of Calgary
Vasomotor Mechanisms Of Renal Afferent And Efferent Arterioles

LuValle, Phyllis A., Ph.D.
Faculty of Medicine, Department of Biochemistry and Molecular Biology, University of Calgary
Control Of Condrocyte Differentiation By Raf Signaling

Meddings, Jonathan B., MD
Faculty of Medicine, Department of Medicine, University of Calgary
Intestinal Permeability And Inflammatory Bowel Disease

Melancon, Paul R., Ph.D.
Faculty of Medicine & Dentistry, Department of Cell Biology, University of Alberta
Regulation Of ARF-Dependent Assembly Of Coat Proteins

Moqbel, Redwan, Ph.D.
Faculty of Medicine & Dentistry, Department of Medicine, University of Alberta
Biology Of Eosinophil-Derived Cytokines And Their Contribution To Immune And Inflammatory Reactions

Morse, Janice M., Ph.D.
Faculty of Nursing, University of Alberta
Delineating Processes Of Comforting

Olson, David M., Ph.D.
Faculty of Medicine & Dentistry, Department of Obstetrics & Gynaecology, University of Alberta
Eicosanoids In Perinatology

Ostergaard, Hanne L., Ph.D.
Faculty of Medicine & Dentistry, Department of Medical Microbiology & Immunology, University of Alberta
Contribution Of Accessory Molecules To Lymphocyte Activation

Riabowol, Karl T., Ph.D.
Faculty of Medicine, Department of Biochemistry and Molecular Biology, University of Calgary
Regulation of growth in transformed and senescing cells

Santamaria, Pere, MD, Ph.D.
Faculty of Medicine, Department of Microbiology & Infectious Diseases, University of Calgary
T-Cell Tolerance Versus Genetic Resistance To Spontaneous Autoimmune Diabetes

Sharkey, Keith A., Ph.D.
Faculty of Medicine, Department of Physiology & Biophysics, University of Calgary
The Effects Of Inflammation On The Enteric Nervous System

Schultz, Michael C., Ph.D.
Faculty of Medicine & Dentistry, Department of Biochemistry, University of Alberta
Molecular Regulation Of Transcription And Chromatin Assembly In Yeast

Schulz, Richard, Ph.D.
Faculty of Medicine & Dentistry, Department of Pediatrics, University of Alberta
Physiological And Pathophysiological Roles Of Nitric Oxide And Peroxynitrite In The Heart

Spencer, Charlotte A., Ph.D.
Faculty of Medicine & Dentistry, Department of Oncology, University of Alberta
RNA Polymerase II Modifications And Transcription Regulation During Virus Infection

Stewart, Miriam J., Ph.D.
Faculty of Nursing, University of Alberta
Social Support: Health Determinant, Protective Factor In Resilience And Relevant Interventions

Stone, James C., Ph.D.
Faculty of Medicine & Dentistry, Department of Biochemistry, University of Alberta
Molecular Genetic Dissection Of The RAS Signaling Pathway

Syed, Naweed I., Ph.D.
Faculty of Medicine, Department of Cell Biology & Anatomy, University of Calgary
Cellular And Molecular Mechanisms Underlying Target Cell Selection And Specific Synapse Formation In A Model System

Turner, Raymond W., Ph.D.
Faculty of Medicine, Department of Cell Biology & Anatomy, University of Calgary
Soma-Dendritic Interactions In Oscillatory Discharge

Dr. Dennis Vance is acclaimed for his work in the lipid (fat) field. His studies on a particular lipid found in cell walls showed that when the manufacture of this lipid is decreased in the liver, less bad cholesterol is secreted into the blood stream.

Videman, Tapio K., MD, Ph.D. Faculty of Rehabilitation Medicine, Department of Physical Therapy, University of Alberta
Determinants Of Spinal Degenerative Findings A Methodologic And Epidemiologic Investigation With Twins Using MPI & DEXA

Warnock, Garth L., MD Faculty of Medicine & Dentistry, Department of Surgery, University of Alberta
Optimization Of The Survival Of Transplanted Human Pancreatic Islets Of Langerhans

Wozniak, Richard W., Ph.D. Faculty of Medicine & Dentistry, Department of Cell Biology, University of Alberta
Molecular Dynamics Of Transport Through The Nuclear Pore Complex

Yong, Voon Wee, Ph.D. Faculty of Medicine, Department of Clinical Neurosciences, University of Calgary
Mechanisms Of Process Extension And Myelin Formation By Oligodendrocytes

Young, Dallan B., Ph.D. Faculty of Medicine, Department of Biochemistry and Molecular Biology, University of Calgary
Investigation Of Mammalian CAP And CAP2

Scientist

Archer, Stephen L., MD Faculty of Medicine & Dentistry, Department of Medicine, University of Alberta
Molecular Basis Of Hypoxic Pulmonary Vasoconstriction-Identification Of Voltage-Gated Potassium Channels And Oxygen Sensors In Pulmonary Artery Smooth Muscle Cells

Bleackley, R. Christopher, Ph.D., Faculty of Medicine & Dentistry, Department of Biochemistry, University of Alberta
Pathways To Cell Mediated Cytotoxicity

Brindley, David N., Ph.D. Faculty of Medicine & Dentistry, Department of Biochemistry, University of Alberta
Signal Transduction By Bioactive Lipids

Bulloch, Andrew G., Ph.D. Faculty of Medicine, Department of Physiology & Biophysics, University of Calgary
Molecular And Cellular Analysis Of Neuronal Plasticity

Campenot, Robert B., Ph.D. Faculty of Medicine & Dentistry, Department of Cell Biology, University of Alberta
Regulation Of Growth And Development Of Rat Sympathetic Neurons In Vitro

Colmers, William F., Ph.D. Faculty of Medicine & Dentistry, Department of Pharmacology, University of Alberta
Neuromodulation In CNS

Duff, Henry J., MD Faculty of Medicine, Department of Medicine, University of Calgary
Regulation Of Expression Of The Ether-a-go-go Potassium Channel

Eggermont, Jos J., Ph.D. Faculty of Social Sciences, Department of Psychology, University of Calgary
Temporal Coding In Auditory Cortex. Effects Of Maturation And Induced Plastic Changes.

Field, L. Leigh, Ph.D. Faculty of Medicine, Department of Medical Genetics, University of Calgary
Genetic Analysis Of Several Common Complex Disorders

Frank, Cyril B., MD Faculty of Medicine, Department of Surgery, University of Calgary
The Mechanisms Of Scar Remodelling

French, Robert J., Ph.D. Faculty of Medicine, Department of Physiology & Biophysics, University of Calgary
Structure, Function And Regulation Of Ion Channels

Fujita, Donald J., Ph.D. Faculty of Medicine, Department of Biochemistry and Molecular Biology, University of Calgary
Src-Family Kinases: Function, Regulation And Involvement In Cancers

Gordon, Tessa T., Ph.D. Faculty of Medicine & Dentistry, Department of Pharmacology, University of Alberta
Functional Recovery after Central and Peripheral Nerve Injuries.

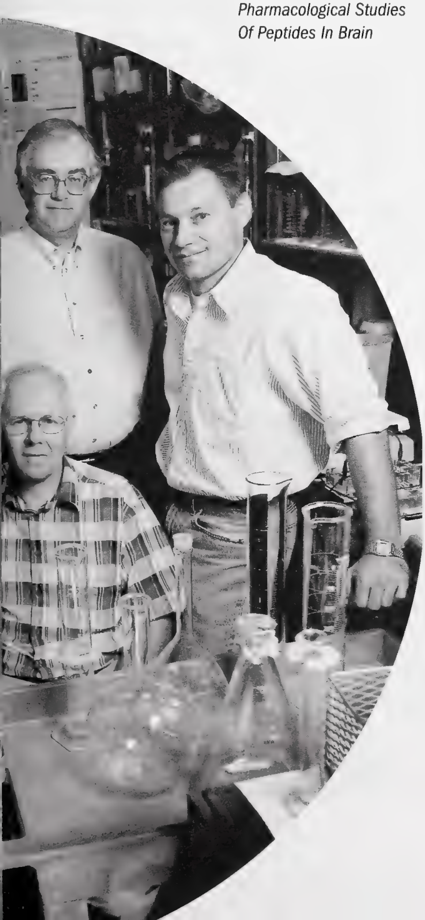
Gravel, Roy, Ph.D. Faculty of Medicine, Department of Cell Biology & Anatomy, University of Calgary
Molecular Genetics Of Pediatric Neurodegenerative And Metabolic Diseases

Hulliger, Manuel, MD, Ph.D. Faculty of Medicine, Department of Clinical Neurosciences, University of Calgary
Studies In Motor Control

Lopaschuk, Gary D., Ph.D. Faculty of Medicine & Dentistry, Department of Pediatrics, University of Alberta
Energy Substrate Metabolism In The Ischemic And Non-Ischemic Heart

MacVicar, Brian A., Ph.D. Faculty of Medicine, Department of Physiology & Biophysics, University of Calgary
Synaptic And Non-Synaptic Control Of Neuronal Excitability

Fundamental research on ion channels and transporters is being conducted by a group of Calgary scientists: **Drs. Wayne Giles, Robert Clark, Robert French, Paul Kubes, Jonathan Lytton,** and **Paul Schnetkamp.** Their research will help further understanding of the structure and function of ion channels and key calcium transporter molecules. Many diseases of the heart and nervous system are caused by malfunction of these channels and transporters.



Mains, Paul E., Ph.D.
Faculty of Medicine,
Department of Biochemistry and Molecular Biology,
University of Calgary
Genetic And Molecular Analysis Of C. elegans Development

McGhee, James D., Ph.D.
Faculty of Medicine,
Department of Biochemistry and Molecular Biology,
University of Calgary
Development Of The Digestive Tract Of The Nematode Caenorhabditis Elegans

Michalak, Marek, Ph.D.
Faculty of Medicine & Dentistry, Department of Biochemistry, University of Alberta
Calreticulin And Endoplasmic Reticulum Signaling

Pittman, Quentin J., Ph.D.
Faculty of Medicine,
Department of Physiology & Biophysics, University of Calgary
Physiological And Pharmacological Studies Of Peptides In Brain

Prochazka, Arthur, Ph.D.
Faculty of Medicine & Dentistry, Department of Physiology, University of Alberta
Sensory Control Of Movement

Rabinovitch, Alexander, MD
Faculty of Medicine & Dentistry, Department of Medicine, University of Alberta
Immunopathogenesis And Immunopathology Of Type 1 Diabetes

Reha-Krantz, Linda J., Ph.D.
Faculty of Science,
Department of Biological Sciences, University of Alberta
Mutational And Biochemical Studies Of DNA Polymerases

Remmers, John E., MD
Faculty of Medicine,
Department of Medicine,
University of Calgary
Neural Mechanisms Controlling Breathing

Ryan, Robert O., Ph.D.
Faculty of Medicine & Dentistry, Department of Biochemistry, University of Alberta
Structure And Function Of Amphipathic Exchangeable Apolipoproteins

Schnetkamp, Paul P., Ph.D.
Faculty of Medicine,
Department of Biochemistry and Molecular Biology,
University of Calgary
Structure And Function Of The Retinal Rod Na-Ca+K Exchanger And Guanylyl Cyclase

Schryvers, Anthony B., MD, Ph.D., Faculty of Medicine,
Department of Microbiology & Infectious Diseases,
University of Calgary
Transferrin Receptor-Mediated Iron Acquisition In Pathogenic Bacteria

Schürch, F. Samuel, Ph.D.
Faculty of Medicine,
Department of Physiology & Biophysics, University of Calgary
Structure Function Relations Of Alveolar And Airway Surfactant

Taylor, Diane E., Ph.D.
Faculty of Medicine & Dentistry, Department of Medical Microbiology & Immunology, University of Alberta
Genetic Studies Of Bacterial Plasmids, Campylobacter And Helicobacter

Tyberg, John V., MD, Ph.D.
Faculty of Medicine,
Department of Medicine,
University of Calgary
Cardiac, Pulmonary, And Vascular Determinants Of Left Ventricular Filling

Vance, Dennis E., Ph.D.
Faculty of Medicine & Dentistry, Department of Biochemistry, University of Alberta
Phosphatidylcholine Metabolism And Function

Vogel, Hans J., Ph.D.
Faculty of Science,
Department of Biological Sciences, University of Calgary
NMR Studies Of Regulatory And Metal Ion Binding Proteins

Wallace, John L., Ph.D.
Faculty of Medicine,
Department of Pharmacology & Therapeutics, University of Calgary
NSAID-Induced Gastroenteropathy: Pathogenesis And Prevention

Walsh, Michael P., Ph.D.
Faculty of Medicine,
Department of Biochemistry and Molecular Biology,
University of Calgary
Regulation Of Smooth Muscle Contraction By Protin Kinase C And The Thin Filament-Associated Protein, Calponin

Weiss, Samuel, Ph.D.
Faculty of Medicine,
Department of Cell Biology & Anatomy, University of Calgary
Neurogenesis By Central Nervous System Stem Cells

Wong, Norman C.W., MD
Faculty of Medicine,
Department of Medicine,
University of Calgary
Regulation Of Apolipoprotein AI Gene Expression

Young, James D., Ph.D.
Faculty of Medicine & Dentistry, Department of Physiology, University of Alberta
Molecular Physiology Of Nucleoside And Amino Acid Transporter Proteins

Yoon, Ji-Won, Ph.D.
Faculty of Medicine,
Department of Microbiology & Infectious Diseases,
University of Calgary
Cellular & Molecular Pathogenic Mechanisms Of Type I Diabetes And Its Possible Intervention

AHFMR advisory committees

1999-2000 Membership

Health Advisory Committee

Dr. Linda Aiken
University of Pennsylvania
Philadelphia, PA

Dr. Deborah A. Freund
Syracruse University
Syracuse, NY

Dr. Lawrence W. Green
University of British
Columbia
Vancouver, B.C.

Dr. Andreas Laupacis
Ottawa Civic Hospital
Ottawa. ON

Dr. Robert S. Lawrence
Johns Hopkins University
Baltimore, MD

Dr. Duncan Neuhauser
Case Western Reserve
University
Cleveland, OH

Dr. Edward B. Perrin
University of Washington
Seattle, WA

◆ **Dr. Helen Roberts**
Barnardo's
Essex, England

Prof. Trevor Sheldon
University of York
York, England

Prof. Leif Svanstrom
Karolinksa Institutet
Stockholm, Sweden

Scientific Advisory Council Membership

Dr. John Bell
John Radcliffe Hospital
Oxford, England

Dr. Alan Bernstein
Canadian Institutes
of Health
Ottawa, ON

Dr. Abraham Fuks
McGill University
Montreal, PQ

Dr. Diane E. Griffin
Johns Hopkins University
Baltimore, MD

Dr. Jennifer Lund
Institute of Ophthalmology
London, England

Dr. Jonathan Meakins
Royal Victoria Hospital
Montreal, PQ

Dr. Edward B. Perrin
University of Washington
Seattle, WA

Dr. Daniel Porte, Jr.
University of Washington
Seattle, WA

Dr. Anita B. Roberts
National Cancer Institute
Bethesda, Maryland

Dr. Gary L. Stiles
Duke University
Durham, NC

AHFMR peer review advisory committees

1999-2000 Membership

Alberta Health Collaboration Advisory Committee

Dr. Doug Wilson, Chair
University of Alberta

Dr. Marion Allen
University of Alberta

Dr. Glen Beck
University of Saskatchewan

Dr. Nicholas Birkett
University of Ottawa

◆ **Ms. Kelly Deis**
Morinville, AB

Dr. Keith Dobson
University of Calgary

◆ **Dr. Geoffrey Dougherty**
Montreal Children's
Hospital

Dr. David Hogan
University of Calgary

Dr. Richard Musto
Calgary Regional Health
Authority

Dr. John Reddon
Alberta Hospital, Edmonton

Dr. John Remmers
University of Calgary

Dr. Donald Spady
University of Alberta

Dr. Wendy Ungar
Hospital for Sick Children
Toronto, ON

Clinical Committee

Dr. Lindsay Nicolle, Chair
University of Manitoba

Dr. Steve Gallinger
Mt. Sinai Hospital
Toronto, ON

Dr. Gilles Lavigne
University of Montreal

Dr. Sheldon Magder
Royal Victoria Hospital
Montreal, QC

Dr. Donald Smyth
University of Manitoba

Dr. Jerry Warsh
Clarke Institute
of Psychiatry
Toronto, ON

Community Health Applications Advisory Committee

Dr. Lynn Meadows
University of Calgary

Ms. Mary Oordt
Lethbridge, Alberta

Ms. Debbie Phillipchuk
Edmonton, AB

Mr. Dan Richen
Drumheller, AB

Conference Grant Committee

◆ **Dr. Phyllis Giovannetti**
University of Alberta

Dr. Cyril Kay
University of Alberta

Dr. S.F. Paul Man
University of Alberta

Dr. Gilbert Schultz
University of Calgary

◆ **Dr. Eldon Shaffer**
University of Calgary

Dr. George Wyse
University of Calgary

Fellowship Committee

Dr. Richard Hawkes, Chair
University of Calgary

◆ **Dr. Glen Armstrong**
University of Alberta

Dr. John Greer
University of Alberta

Dr. Charles Holmes
University of Alberta

Dr. Brian Keay
University of Calgary

Dr. Paul Mains
University of Calgary

Dr. Hanne Ostergaard
University of Alberta

Dr. Glen Prusky
University of Lethbridge

Dr. John Samuel
University of Alberta

◆ **Dr. Richard Schulz**
University of Alberta

Dr. David Severson
University of Calgary

Dr. Koon T. Teo
University of Alberta

◆ **Dr. Norman Wong**
University of Calgary

◆ **Dr. Voon Wee Yong**
University of Calgary

Health Traineeship Committee

Dr. Gordon Fick, Chair
University of Calgary

Dr. Heather Bryant
Alberta Cancer Board

◆ **Dr. Nicholas Coupland**
University of Alberta

Dr. Kerry Courneya
University of Alberta

◆ **Dr. Jane Drummond**
University of Alberta

Dr. Margaret Harrison
University of Alberta

Dr. Alan Kingstone
University of Alberta

◆ **Dr. Candace Konnert**
University of Calgary

Dr. Judith Kulig
University of Lethbridge

◆ **Dr. Colin MacArthur**
University of Calgary

Dr. Scott Patten
University of Calgary

Dr. Maria Suarez-Almazor
University of Alberta

Major Equipment Committee

Dr. Kent HayGlass, Chair
University of Manitoba

Dr. Bruce Brandhorst
Simon Fraser University

Dr. Kevin Coombs
University of Manitoba

Dr. Bernard Juurlink
University of Saskatchewan

◆ *Denotes members who started after April 1, 1999 and before March 31, 2000*

AHFMR peer review advisory committees, continued...

◆ **Dr. Edwin Moore**
University of British Columbia

Dr. Gary Quamme
University of British Columbia

◆ **Dr. Ronald Reid**
University of British Columbia

Dr. Bruce Waygood
University of Saskatchewan

Scholarship Committee

◆ **Dr. James Hogg, Chair**
St. Paul's Hospital
Vancouver, B.C.

Dr. Paul Albert
University of Ottawa

Dr. Garth Bray
McGill University

◆ **Dr. Alison Buchan**
University of British Columbia

Dr. Harold Cook
Dalhousie University

◆ **Dr. Ian Dixon**
University of Manitoba

◆ **Dr. Victor Han**
Lawson Research Institute
London, ON

Dr. Stephen Lye
Mt. Sinai Hospital, Toronto

Dr. Grant Pierce
University of Manitoba

Dr. Ken Rosenthal
McMaster University

Dr. Melvin Silverman
University of Toronto

Dr. Keith Tanswell
Hospital for Sick Children, Toronto

Dr. David Thomas
National Research Council, Montreal

◆ **Dr. Michel Tremblay**
McGill University

Senior Scholar Committee

Dr. Ross MacGillivray, Chair
University of British Columbia

Dr. John Challis
University of Toronto

◆ **Dr. James Gilchrist**
University of Manitoba

◆ **Dr. David Lillicrap**
Queen's University

Dr. James Lund
McGill University

Dr. John Schrader
University of British Columbia

Dr. Stephen Sims
University of Western Ontario

Dr. Clifford Stanners
McGill University

Studentship Committee

Dr. Peter Smith, Chair
University of Alberta

Dr. Glen Baker
University of Alberta

Dr. David Bundle
University of Alberta

Dr. William Cole
University of Calgary

Dr. Larry Fliegel
University of Alberta

◆ **Dr. Phyllis LuValle**
University of Calgary

Dr. Jonathan Lytton
University of Calgary

◆ **Dr. Wallace MacNaughton**
University of Calgary

Dr. Anthony Schryvers
University of Calgary

Dr. Ellen Shibuya
University of Alberta

Dr. John Tyberg
University of Calgary

Dr. Richard Wozniak
University of Alberta

Dr. Douglas Zochodne
University of Calgary

Summer Studentship Committee

Dr. Pam Sokol, Chair
University of Calgary

Dr. Todd Anderson
University of Calgary

Dr. Andrew Cave
University of Alberta

◆ **Dr. Sandra Davidge**
University of Alberta

Dr. Jane Drummond
University of Alberta

Dr. Gordon Francis
University of Alberta

◆ **Dr. William Ghali**
University of Calgary

Dr. Susan Lees-Miller
University of Calgary

Dr. Brenda Leskiw
University of Alberta

Dr. Sergio Pellis
University of Lethbridge

Dr. Michael Walter
University of Alberta

Technology Commercialization Committee

◆ **Dr. Paul Greenwood, Chair**
Edmonton, AB
(as of March 20, 2000)

◆ **Dr. Lorne Babiuk**
University of Saskatchewan

Mr. Tom Biggs, Chair
Coronation, AB

Dr. David Dolphin
University of British Columbia

◆ **Dr. Emily Hamilton**
Montreal, QC

◆ **Mr. Peter Hill**
Edmonton, AB

Mr. David Kitchen
Calgary, AB

Mr. Alvin Libin
Calgary, AB

◆ **Dr. Peter Macklem**
Montreal, QC

◆ **Dr. Bruce McDonald**
Winnipeg, MB

Dr. James McEwen
Vancouver, BC

Dr. Tom Rice
White Bear Lake, MN

Mr. Michael Witt
Troy, MI

Mr. Mel Wong
Edmonton, AB

AHFMR miscellaneous advisory committees

1999-2000 Membership

Community Health Ethics Review Committee

Rev. Lynne Belfry
Airdrie, AB

Mr. Neil Bowker
Calgary, AB

Dr. John Dossetor
Ottawa, ON

Dr. James Howell
Edmonton, AB

Mr. Al-Noor Nathoo
Calgary, AB

Dr. Maeve O'Beirne
Calgary, AB

Ms. Sharon Read
Edmonton, AB

Ms. Brenda Strom
Grande Prairie, AB

Health Research Advisory Committee

Dr. Heather Bryant
Calgary, AB

Dr. Ursula Dawe
Calgary, AB

Dr. Ronald Dyck
Edmonton, AB

Dr. Paul Hasselback
Lethbridge, AB

Ms. Cindy Jardine
Edmonton, AB

Mr. Nelson Kennedy
Edmonton, AB

Ms. Shelley Mabbott
Cochrane, AB

Dr. John MacKay
Medicine Hat, AB

Dr. Luis Martin
Edmonton, AB

Ms. Barbara Nyland
Edmonton, AB

Ms. Mary Oordt
Lethbridge, AB

Ms. Sheila Payne
Edmonton, AB

Mr. Steven Petz
Camrose, AB

Dr. Don Philippon
Edmonton, AB

Ms. Sheilah Sommer
Banff, AB

Dr. Lloyd Sutherland
Calgary, AB

Ms. Sheila Weatherhill
Edmonton, AB

Dr. Douglas Wilson
Edmonton, AB

Ms. Penny Wilson
Calgary, AB

Program Advisory Committee

Dr. Paul Armstrong
University of Alberta

Dr. Robert Bray
University of Calgary

◆ *Denotes members who started after April 1, 1999 and before March 31, 2000*

Dr. Julie Deans
University of Calgary

Dr. John Jarrell
University of Calgary

Dr. David Olson
University of Alberta

Dr. Richard Peter
University of Alberta

◆ **Dr. Christopher Triggle**
University of Calgary

Dr. Joel Weiner
University of Alberta

Dr. Donald Woods
University of Calgary

S.E.A.R.C.H. Steering Committee

Dr. Jeanne Besner
Calgary, AB

Dr. Anne Casebeer
University of Calgary

Ms. Muriel Davidson
Slave Lake, AB

Ms. Kelly Deis
Morinville, AB

Mr. Ed Johnston
Water Valley, AB

Ms. Sharon Matthias
Edmonton, AB

Mr. Dwight Nelson
High River, AB

Dr. Maeve O'Beirne
Calgary, AB

Alberta Consultative Health Research Network Advisory Committee

Mr. Howard Abrams
Toronto, ON

Dr. Larry Chambers
Hamilton, ON

Ms. Kelly Deis
Morinville, AB

Mr. Wayne Elford
Calgary, AB

Ms. Bette Gray
Stony Plain, AB

Dr. Paul Hasselback
Lethbridge, AB

Mr. Stewart McMillan
Regina, SK

Dr. Cameron Mustard
Toronto, ON

Dr. Tom Noseworthy
University of Alberta

Ms. Kerrie Pain
Canmore, AB

Dr. Lloyd Sutherland
University of Calgary

Dr. Ollie Triska
University of Alberta

Ms. Marja Verhoef
Calgary, AB

Provincial, national and international awards

Won by AHFMR supported researchers

Dr. Todd Anderson
The Watanabe Distinguished Achievement Award for overall excellence

Nancy Berg
Alice Wilson Award from the Royal Society of Canada (former AHFMR graduate student)

Dr. Luc Berthiaume
1999 Bristol Myers Squibb Scientist Award

Shelley Buckley
1999 Alberta Respiratory Disease Symposium Book Prize

1999 J. Gordin Kaplan Graduate Student Award

Prof. David Bundle
R.U. Lemieux Award for Organic Chemistry from the Canadian Society for Chemistry

Dr. Deborah Burshtyn
CIHR Peter Lougheed Scholarship

Prof. Tim Caulfied
2000 Martha Cook Piper Research Prize

Dr. Linda Cook
CIHR Peter Lougheed Scholarship

Dr. Tamas Csont
TEVA-Biogal Award

Dr. Cy Frank
Smith Distinguished Achievement Award for outstanding contributions by senior faculty members

Dr. Richard Frayne
Calgary Herald Young Innovator Award

Heart and Stroke Foundation of Canada Henry J.M. Barnett Award for Stroke Research

Dr. William Ghali
The Cochrane Distinguished Achievement Award for excellence in research (National)

Dr. John Greer
1999 Canadian Physiological Society J.A.F. Stevenson Young Investigator Award

Prof. Dennis Hall
1999 Bio-Mega / Boehringer Ingelheim Young Investigator Award for Organic Chemistry (National)

Dr. Paul Kubes
2000 Canadian Association of Gastroenterology Young Investigator Award

1999 Microcirculatory Society Wiederhelm Award for the most cited original article

1999 Microcirculation Gerritsen Award for the most cited review article

Smith Distinguished Achievement Award for outstanding contributions by senior faculty members

Mr. Salahaddin Mahmudi-Azer
(doctoral student)
Medical Research Council of Canada gold prize for excellence

Dr. Finlay McAlister
Canadian Society of Internal Medicine Young Investigator Award

Dr. Kamala Patel
Canadian Breast Cancer Research Initiative Ideas Program Award

Dr. Scott Patten
Petro Canada Young Innovator Award in Community Health

Dr. Chris Power
2000 Royal College Medal in Medicine

The Cochrane Distinguished Achievement Award for excellence in research

Dr. Derrick Rancourt
1999 Canadian Federation of Biological Societies AstraZeneca Award

1999 Genetics Society of Canada Young Scientist Award

Dr. Linda Reha-Krantz
YWCA of Edmonton 2000 Tribute to Women of Distinction Award in Science & Technology

Dr. Karl Riabowol
2000 President's Circle Award for Excellence in Research

Dr. Stephen Robbins
The Watanabe Distinguished Achievement Award for overall excellence

Dr. Pere Santamaria
2000 Canadian Diabetes Association, Great West & London Life Young Scientist Award

Dr. Richard Schulz
Merck Frosst Award in Pharmacology

Carol Scovil (PhD student)
Claudette MacKay-Lassonde Scholarship

Deborah Sterling (graduate student)
ER Smith Award

Dr. Michael Surette
Canadian Society for Microbiology, Fisher Young Scientist Award

Dr. Diane Taylor
2000-2001 Killam Annual Professorship

Melanie Woodin (PhD student)
Neuroscience Canada Foundation Award

Dr. V. Wee Yong
The Cochrane Distinguished Achievement Award for excellence in research

Dr. Ji-Won Yoon
Lectureship Award at the 9th Annual Meeting of the Society of Biomedical Research

Ho-Am Foundation Award in Medicine (Korean Nobel Prize)

Dr. Gerald Zamponi
Young Investigator Award from the Canadian Pharmacological Society

---

◆ *Denotes members who started after April 1, 1999 and before March 31, 2000*

Success rates

For trainee and researcher competitions • 1999-2000

The results are expressed as number of applications received/number of applications approved; followed by the percentage of successful applicants.

COMPETITION	1999/2000	
CLINICAL INVESTIGATORS (NEW)	8/5	63%
CLINICAL INVESTIGATORS (RENEWAL)	2/1	50%
SCHOLAR (NEW)	28/17	61%
SCHOLAR (CLINICAL INVESTIGATOR TO SCHOLAR)	4/4	100%
INDEPENDENT ESTABLISHMENT	4/1	25%
SENIOR SCHOLAR (NEW)	3/3	100%
SENIOR SCHOLAR (SCHOLAR TO SENIOR SCHOLAR)	14/11	79%
SCIENTIST - NEW (SENIOR SCHOLAR TO SCIENTIST)	6/3	50%
SCIENTIST (RENEWAL)	6/4	67%
HEALTH RESEARCH SCHOLAR	4/1	25%
HEALTH RESEARCH INDEPENDENT ESTABLISHMENT GRANT	3/1	33%
POPULATION HEALTH INVESTIGATOR (NEW)	8/5	63%
POPULATION HEALTH INVESTIGATOR (RENEWALS)	3/1	33%
CLINICAL FELLOWS	17/8	47%
FELLOWS	133/38	29%
STUDENTS	276/70	25%
PART-TIME STUDENTS	1/1	54%
MAJOR EQUIPMENT	73/36	49%
HEALTH RESEARCH FUND	41/21	51%
MENTAL HEALTH STUDENTS	24/4	17%
SUMMER STUDENTS	377/202	54%
TOTALS	**1035/437**	**42%**

Trainee applications/awards include Biomedical, MD/Ph.D. and Health Research.

For its senior personnel awards competitions and for the Health Research Fund, AHFMR received 513 external reviews of applications which were considered by 70 members of 7 review committees who advised the Foundation on these programs.

Applications for Trainee awards were considered by 34 members of 4 review committees.

Funding details of the Technology Commercialization Program

In 1999/2000, funding was provided in the amount of $920,127 in seven areas: Diagnostics, Drugs, Health Informatics, Internship/Training, Medical Devices, Medical Research Technologies and Non-Drug Therapies.

	1999/00	
Technology Commercialization Program	35/18	51%

Financial summary

CONSOLIDATED Statement of Financial Position

March 31, 2000
(THOUSANDS OF DOLLARS)

	2000	1999
ASSETS		
CASH	$3,593	$3,434
RESTRICTED CASH	2,581	5,649
ACCOUNTS RECEIVABLE	26	22
ADVANCES AND PREPAID EXPENSES	60	40
CAPITAL ASSETS	447	586
DEFERRED PENSION COSTS	53	73
	$6,760	$9,804
LIABILITIES AND NET ASSETS		
ACCOUNTS PAYABLE AND ACCRUED LIABILITIES	$1,785	$2,138
ACCRUED RETIREMENT ALLOWANCE	221	184
DEFERRED LEASE INDUCEMENT	21	40
CAPITAL LEASE OBLIGATION	-	55
DEFERRED CONTRIBUTIONS	4,867	5,948
	6,894	8,365
NET (LIABILITIES) ASSETS	(134)	1,439
	$6,760	$9,804

CONSOLIDATED Statement of Revenue and Expense

FOR THE YEAR ENDED MARCH 31, 2000
(THOUSANDS OF DOLLARS)

		2000		1999
	Operations	**Other Programs**	**Total**	**Total**
REVENUE				
TRANSFERS FROM ENDOWMENT FUND	$39,500	$ –	$39,500	$36,000
AMORTIZATION OF DEFERRED CONTRIBUTIONS	–	4,039	4,039	5,287
DONATIONS	–	1	1	–
INTEREST	276	7	283	258
RECOVERIES ON TECHNOLOGY COMMERCIALIZATION	15	–	15	12
OTHER	1	–	1	8
	39,792	4,047	43,839	41,565
EXPENSE				
GRANTS AND AWARDS				
PERSONNEL	20,018	–	20,018	18,586
TRAINING	5,951	–	5,951	5,649
HEALTH RESEARCH	4,977	–	4,977	3,377
OTHER	7,412	2,476	9,888	9,310
	38,358	2,476	40,834	36,922
PROGRAM OPERATION				
SALARIES AND BENEFITS	–	193	193	167
ADVISORY AND PEER REVIEW	490	236	726	607
SEARCH PROGRAM	203	–	203	438
HYRS PROGRAM	38	–	38	–
OTHER EXPENSES	–	346	346	210
RESEARCH CONTRACTS	–	10	10	(2)
OTHER INITIATIVES	20	–	20	35
	751	785	1,536	1,455
ADMINISTRATION				
OFFICE ADMINISTRATION	1,718	784	2,502	2,340
COMMUNICATION AND EDUCATION	304	–	304	224
PLANNING AND GOVERNANCE	236	–	236	288
	2,258	784	3,042	2,852
	41,367	4,045	45,412	41,229
(DEFICIENCY) EXCESS OF REVENUE OVER EXPENSES	$(1,575)	$ 2	$(1,573)	$ 336

Programs and Financial* Highlights 1999-2000

ahfmr

ALBERTA HERITAGE FOUNDATION FOR MEDICAL RESEARCH

For information, contact:

Alberta Heritage Foundation
for Medical Research
3125 Manulife Place
10180-101 Street
Edmonton, Alberta
T5J 3S4

Phone: (780) 423-5727
Fax: (780) 429-3509
E-Mail: postmaster@ahfmr.ab.ca
Internet: http://www.ahfmr.ab.ca

*Full consolidated financial statements are available from AHFMR. Please call us at (780) 423-5727, or e-mail us at postmaster@ahfmr.ab.ca, or write us at: AHFMR, 3125 Manulife Place, 10180 - 101 Street, Edmonton, Alberta, T5J 3S4, for a copy mailed to you free of charge.

ALBERTA HERITAGE
FOUNDATION FOR
MEDICAL RESEARCH